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SECTION 2. SPECIFICATIONS

2.1 BACKGROUND

The Technical Services Procurement (TSP) procurement is a multiple contract procurement vehicle designed to provide a broad range of IT support services to Maryland State government agencies. This procurement will result in one or more Indefinite Delivery, Indefinite Quantity (ID/IQ) Contracts. Through the use of the contracts resulting from this procurement, State agencies will have a flexible means of obtaining IT resources quickly, efficiently, and cost effectively.

2.2 SCOPE OF WORK

Contractors will provide services in eight (8) primary functional areas. The functional areas are as follows:

1) Enterprise Service Provider (ESP) – (See 2.4.1)
2) Electronic Commerce (EC)/Electronic Data Interchange (EDI) Support - (See 2.4.2)
3) Electronic Document Management - (See 2.4.3)
4) Geographical Information Systems (GIS) - (See 2.4.4)
5) Software Engineering - (See 2.4.5)
6) Systems/Facilities Management and Maintenance - (See 2.4.6)
7) Information System Security Support Services - (See 2.4.7)
8) Application Service Provider (ASP) - (See 2.4.8)

Offerors may submit offers for any or all of the listed functional areas.

The State intends to award up to the following number of Contracts to qualified offerors in each functional area:

Functional Area	Maximum Number of Contract Awards Per Functional Area
Enterprise Service Provider	5
Electronic Commerce/Electronic Data Interchange Support	5
Electronic Document Management	3
Geographical Information Systems	3
Software Engineering	5
Systems/Facilities Management and Maintenance	3
Information System Security Support Services	3
Application Service Provider	3
Maximum Number of Awards Under Contract	**30**

All contractors receiving an award for a functional area will receive all task orders in that functional area.

The State of Maryland will be using TSP to obtain the gamut of support resources related to Information Resource Management (IRM), from software development to database administration to mainframe and data center support and application service provision. Inherent in providing these services, the Contractor shall provide the supervision and management effort necessary for efficient and effective administration and control of work performed under TSP. The Contractor shall ensure adequate resources are dedicated to satisfy the requirements of work assignments.

The Scope of Services contained herein is intended to outline the general vendor requirements under TSP. Specific details of work assignments, deliverables, documentation, training, applicable State/departmental/industry standards, etc., will be provided in each individual Master Task or Task Order.

2.2.1 Hardware and Software

Integral to the services necessary in performing the preceding functional areas, acquisition of hardware/software on a leased, depreciated, or purchased basis may also be required of the Contractor. Under any of the eight (8) functional areas, a Master Task or Task Order may be used to acquire hardware/software up to a minority percentage, i.e., less than 50 percent of the value of the Master Task or Task Order. The types of hardware/software envisioned would include, but are not limited to, such items as: IT infrastructure hardware/software utilities, CASE tools (e.g., Oracle Case, System Architect, Knowledgeware, Netscape, Web Browser), models, database management systems, personal computers, workstations, servers, printers, application software products, compact disk/read only memory (CD/ROM), digital libraries, imaging and optical character recognition equipment, Commercial-Off-The-shelf (COTS) items, general supplies, etc. Technological refreshment/enhancements of hardware/software as well as special access considerations are subject to and included in the limitation on the use of Task Orders for hardware and software required by individual Task Orders

2.2.1.1 SOFTWARE - GENERAL

~~All Offerors shall:~~

- ~~Identify Commercial-Off-The-Shelf (COTS) or proprietary software that the offeror believes may be necessary to support the performance of work associated with the offeror's proposal.~~

- ~~Provide all license agreements necessary for identified software. Agreements must not be in conflict with State law. All options of licensing offered to the State should be included with the Offeror's proposal. This would include individual site licenses to enterprise licenses. All software licensed to the State shall remain the property of the State upon completion of the contract.~~

- The State at it's discretion may allow**, subject to the conditions stated in Section 2.2.1,** the vendor to provide software typically defined as Applications Software to support any task order issued as a result of this solicitation. However, this contract will not be a requirements contract and is not to be construed to require the State to purchase exclusively from the contract. The State reserves the right to make multiple awards and to procure goods and services from other sources when it is in the best interest of the State to do so and without notice to the vendor.

~~All Offerors shall state:~~

- ~~in Volume I, Technical Proposal, Tab 4.7, the software applications they would propose for the State; and,~~

~~in Volume II, Financial Proposal, Tab 1.3, include a proposed discount to all software application price lists that may be purchased by the State.~~

2.2.1.1 CUSTOM SOFTWARE

- The State of Maryland will solely own any custom software developed under any resulting contract. This includes source-codes, maintenance updates, documentation, etc.

- If the Offeror proposes use of an existing software system for which they or others have copyright/ownership rights, the offeror must escrow their source code with an independent third party that will act as an escrow agent.

If the Offeror has established source code policies, the Offeror must provide the following:

- Name and address of third party who acts as escrow agent
- Source code escrow procedures
- Name and address of party who audits escrow account
- Frequency of updates and maintenance of source code at escrow agent
- Description of licensing arrangements and associated costs

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2.3 METHOD OF AWARDING MASTER TASKS OR TASK ORDERS

2.3.1 Master Task or Task Order Requirements

Master Task or Task Orders **requests** will be initiated by the Task Manager assigned by the agency requesting the services and shall define the scope and requirements of the specific requirement. At a minimum a Master Task or Task Order **request** will contain the following information:

- Project, Technical, and Contractual points of contact
- Background information including task objectives
- Technical requirements
- Performance objectives and/or deliverables, as applicable
- Personnel skill categories required
- Period of performance
- Place of performance
- Deliverable/delivery schedule
- Security requirements
- State furnished equipment or information
- Inspection and acceptance criteria
- A set of measurable benefits improvement outcomes
- Specified retainage percentage for the Task Order
- Task Order award selection criteria and associated weight of each.
- **Non-Visual Access Clause Applicability**
- **Minority Business Enterprise Goal**

2.3.2 Master Task or Task Order Proposal Requirements

All Master Task or Task Orders will be sent to all Contractors awarded a Contract within a functional area. All Contractors receiving the Master Task or Task Order must respond with either a proposal or a written notification to the Task Manager that they don't intend to submit a proposal and reason(s) why. Upon receipt of a Master Task or Task Order, the Contractor shall provide a proposal in response to the requirements of the Master Task or Task Order. At a minimum the proposal shall provide the following:

- Proposed approach to satisfying the requirements of the Master Task or Task Order and development of Master Task or Task Order deliverables;
- Proposed schedule in GANTT chart format
- Proposed hours for each labor category (applicable for T&M Master Task or Task Orders);
- Proposed cost or price; and,
- Proposed key personnel with attached resumes.

- Selection will be made based on both technical and price with technical merit having greater weight. Economic benefit will also be an evaluation factor.

Work in response to Master Task or Task Orders shall be initiated only upon issuance of a fully executed Master Task or Task Order or by a Notice to Proceed authorized by the Office of Information Technology, based on the recommendation of the Task Manager.

The State will evaluate the contractor at the end of each six (6) month period and at the end or termination of each Master Task or Task Order. Attachment J is a sample of the form that may be used by the State to evaluate Contractor performance. The State agencies may optionally require the Contractor to fill out the performance evaluation forms. The evaluation will consist of questions relative to the Contractor's performance on the Master Task or Task Order. Survey responses will be used to calculate an overall score for that quarterly evaluation period, Master Task completion, or Task Order completion.

2.3.3 Task Order Value

The value of a single Task Order will not exceed $500,000; however, Master Tasks, to a single contractor, composed of several Task Orders may be constructed for larger projects. That is, a Master Task comprised of multiple Task Orders may be used to incrementally develop a project. The State agency issuing the Master Task will provide written notice to the Contractor in order to begin work on each Task Order comprising the Master Task. The State may terminate the Task Order and/or Master Task if deliverables are not met within each Task Order.

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2.4 FUNCTIONAL AREA DESCRIPTIONS

2.4.1 Enterprise Service Provider (ESP)

a) The Contractor shall perform services to ensure that information systems are designed to capitalize on agency architectures and State IT standards, to provide interoperability with other systems and networks, to be reliable and maintainable, and to make the most cost-effective use of commercial off-the-shelf (COTS) technology and agency-wide and government-wide resources.

b) The Contractor shall provide resources to perform systems integration services including, but not limited to, determining, testing, and exercising the appropriate configurations of two or more hardware or software components of information systems or telecommunications networks to deliver stated levels of performance, interoperability, and maintenance support within the known constraints of an agency's IT infrastructure.

c) The Offeror shall have capabilities in the following functional areas including, but not limited to:

i. Electronic Commerce (EC)/Electronic Data Interchange (EDI);
ii. Electronic Document Management;
iii. Geographical Information Systems (GIS); and,
iv. Software Engineering.

d) The Offeror, specifically the bidding element or component of the organization, shall ~~be assessed a Capability Maturity Model (CMM) Level 2 organization or above or have an equivalent methodology~~ **have project management and system development processes they employ as an organization. These processes should be followed by Offeror's staff and subcontractors when working on a task order project. The Offers shall provide their system development and project management processes as outlined in Section 3.1.2.3 Corporate System Methodology.**.

e) The Offeror shall apply a structured methodology in a laboratory environment to identify, evaluate, and select hardware, software, and services (e.g., telecommunications services, Internet access services, software maintenance) to meet specific requirements and when warranted, adjusting the methodology, including prototypes and pilots, to address risk.

f) The Contractor shall perform research in a laboratory environment and apply experience in providing recommendations and assessments for ESP systems and technologies in areas such as, but not limited to:

i. COTS evaluations and comparisons;
ii. COTS integration strategies and feasibility;
iii. Technology insertion;
iv. Technology upgrades;
v. System concept feasibility; and,

vi. Projected return on investment.

2.4.2 Electronic Commerce (EC)/Electronic Data Interchange (EDI) Support

a) Electronic-Government (e-Gov) is an essential area of Contractor support and a prime initiative for the State of Maryland in the new millenium. The Contractor shall provide resources to support, define, develop, and maintain electronic inter-organizational business networks.

b) The Contractor shall have Web site development capabilities, including, but not limited to:

i. Design, develop and maintain Web site;
ii. Write and maintain Hypertext Markup Language (HTML) code, Dynamic HTML code, JavaScript code, Java code, and XML code;
iii. Provide Web site security management;
iv. Monitor site content, including links, to ensure timeliness, accuracy and security;
v. Create and modify Web applications;
vi. Translate requirements into Web-based solutions, including complex Web sites;
vii. Integrating Web pages and applications to serve as stand alone Web sites or the front-end to Web-based applications;
viii. Develop applications using Internet protocols or Web-based technologies, such as, but not limited to: HTML, CGI applications, PERL, Javascript, and Java;
ix. Design, develop and maintain Portal(s);
x. Provide Web site branding;
xi. Utilize numerous software applications related to Web site development, including, but not limited to: Frontpage, Visual Studio, Adobe Photoshop, Adobe GoLive, Homesite, Active Server Pages, JavaScript, Cold Fusion VBScript, MS Access, SQL Server, Internet Information Server, Index Server, HTML, Dynamic HTML and XML; and,
xii. Apply new and emerging technologies to Web page development.

c) EC/EDI functions include, but are not limited to, the capability to:

i. Recommend measures to establish or maintain compliance with EC/EDI capabilities, including, but not limited to, electronic exchange requests for quotations, quotes, purchase orders, notices of award, electronic payments, document interchange, supporting databases, public notice of solicitations, user access to notices of Contracts and solicitations, receipt of responses to solicitations and requests for information, and receiving questions regarding solicitations;
ii. Provide EC/EDI solution(s) for the full range of the purchase and payment process: from purchaser's identification of need, budget commitment, funds

obligation, acquisition of goods or services, contract administration and payments of invoices, through contract closeout;

iii. Provide EC/EDI solutions for various types of acquisition vehicles from purchase cards to large multi-year contracts;

iv. Provide EC branding;

v. Assist in the implementation and customization of EC/EDI COTS tools;

vi. Work with the State's suppliers, buyers, and end users in the process of establishing EC/EDI interfaces;

vii. Support the maintenance of electronic catalogues of goods and services;

viii. Maintain the State's suppliers' profiles;

ix. Establish or assist in establishing access to the Internet, State systems, and other systems;

x. **Assist offices in becoming certified, as defined within a specific task order, as being fully Internet capable;**

xi. Provide business benefit, revenue neutral, or other type of aggressively competitive package for EC/EDI initiatives;

xii. Implement robust security measures such as Public Key Infrastructure (PKI) and electronic signature; and,

xiii. Define and develop technology support (e.g., core technologies and personnel skilled in open systems for distributive, collaborative, and network computing for enterprise integration; technology standards to provide interoperability and seamless interconnection; agreement on technical interfaces and terminology; recommendations regarding the use of proprietary systems that control partnering relationships; recommendations regarding the use of standards as barriers or restraints to creating partnering relationships; integration of data integrity processes based on functional business rules; and, technology deployment matched to business needs).

d) The Contractor, specifically the bidding element or component of the organization, shall ~~be assessed a Capability Maturity Model (CMM) Level 2 organization or above or have an equivalent methodology~~ **have project management and system development processes they employ as an organization. These processes should be followed by Offeror's staff and subcontractors when working on a task order project. The Offers shall provide their system development and project management processes as outlined in Section 3.1.2.3 Corporate System Methodology.**

e) The Contractor shall apply a structured methodology in a laboratory environment to identify, evaluate, and select hardware, software, and services (e.g., telecommunications services, Internet access services, software maintenance) to meet specific requirements and when warranted, adjusting the methodology, including prototypes and pilots, to address risk.

f) The Contractor shall perform research in a laboratory environment and apply experience in providing recommendations and assessments for EC/EDI systems and technologies in areas such as, but not limited to:

i. COTS evaluations and comparisons;

ii. COTS integration strategies and feasibility;
iii. Technology insertion;
iv. Technology upgrades;
v. System concept feasibility; and,
vi. Projected return on investment.

2.4.3 Electronic Document Management

a) The Contractor shall provide services including, but not limited to, imaging/digitizing, workflow, and electronic document management systems.

b) Electronic Document Management services include, but are not limited to:

i. Workflow analysis;
ii. Document indexing/queuing and workload management;
iii. System/application/network design;
iv. Application prototyping;
v. Implementation and support services;
vi. System interface development;
vii. System migration strategies;
viii. Document conversion (hardcopy to electronic or electronic to new system/media);
ix. Performance monitoring/measurement;
x. System stress testing/benchmarking; and,
xi. Document and records retention/archiving.

c) The Contractor shall apply a structured methodology in a laboratory environment to identify, evaluate, and select hardware, software, and services (e.g., telecommunications services, Internet access services, software maintenance) to meet specific requirements and when warranted, adjusting the methodology, including prototypes and pilots, to address risk.

d) The Contractor shall perform research in a laboratory environment and apply experience in providing recommendations and assessments for electronic document management systems and technologies in areas such as, but not limited to:

i. COTS evaluations and comparisons;
ii. COTS integration strategies and feasibility;
iii. Technology insertion;
iv. Technology upgrades;
v. System concept feasibility; and,
vi. Projected return on investment.

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2.4.4 Geographical Information Systems (GIS)

a) The Contractor shall provide service including, but not limited to, analysis, mapping, operation, digitizing, capacity planning, design, Intranet, Internet, documentation, and various other forms of Geographical Information Systems (GIS).

b) The Contractor shall use GIS technologies to create maps, visualize scenarios, solve problems, present ideas and develop solutions.

c) The Contractor's GIS service capabilities, include, but are not limited to:

i. Linking data with maps using geocoding;
ii. Familiarity with multiple GIS solutions, including COTS packages;
iii. Manipulate geographical data;
iv. Perform queries, analysis and visualization;
v. Utilize Graphical User Interfaces (GUI);
vi. Leverage existing data sets and data assets of the State, as necessary; and,
vii. Knowledge of how to obtain mapping data from outside sources.

d) The Contractor shall apply a structured methodology in a laboratory environment to identify, evaluate, and select hardware, software, and services (e.g., telecommunications services, Internet access services, software maintenance) to meet specific requirements; when warranted, adjusting the methodology, including prototypes and pilots, to address risk.

e) The Contractor shall perform research in a laboratory environment and apply experience in providing recommendations and assessments for GIS systems and technologies in areas such as, but not limited to:

i. COTS evaluations and comparisons;
ii. COTS integration strategies and feasibility;
iii. Technology insertion;
iv. Technology upgrades;
v. System concept feasibility; and,
vi. Projected return on investment.

2.4.5 Software Engineering

a) The Contractor shall provide software engineering support (including planning, analysis, design, evaluation, testing, quality assurance, and project management) in the application of computer equipment through computer programs, procedures, tools, and associated documentation.

b) **Examples of** Software engineering functions include, but are not limited to, the capability to:
i. Provide operations and maintenance support;
ii. Analyze and study complex system requirements;

iii. **As defined within a specific task order,** design software tools and subsystems to support software reuse and domain analyses and manage their implementation;
iv. Manage software development and support using formal specifications, data flow diagrams, and other accepted design techniques and tools;
v. Interpret software requirements and design specifications to code, and integrate and test software components;
vi. Estimate software development costs and schedules;
vii. Review existing programs and assist in making refinements, reducing operating time, and improving current techniques;
viii. Estimate and track software quality attributes; and,
ix. Perform specific software engineering tasks in such areas as: process definition; requirements management (project planning, quality assurance, project tracking and oversight, organizational process focus); software metrics; capability maturity models; software process assessments; software capability evaluations; software project management; software certification; software validation and verification; open systems; software architecture; software reengineering; software reuse; component based software; software security; supervising software configuration management; and Computer Aided Software Engineering (CASE) tools.

c) It may be necessary on certain Master Task or Task Orders to perform software capability evaluations (SCE). The SCE will result in an organizational composite, substantiated through individual interviews and reviews of documentation, of the Contractor's/subcontractor's software process activities on the State's selected projects.

d) It may be necessary on certain Master Task or Task Orders to provide resources to support any or all phases and stages of Software Life Cycle Management (SLCM), including planning, analysis, troubleshooting, integration, acquisition, installation, operation, maintenance, training, documentation, and administration. The Contractor may be responsible for obtaining and/or supporting the necessary software, hardware, firmware, resources, etc., required for a system project. SLCM capabilities include, but are not limited to:

i. Develop applications in accordance with applicable industry standards and State *de facto* standards, etc.;
ii. Develop the objectives and general definition of the requirements for a proposed system (project initiation phase). The system(s) could be in-house development, reengineering an existing system(s), installing and implementing other State agency system(s), and commercial off the shelf (COTS) software;
iii. Develop a needs statement, conducting a feasibility study, risk analysis, cost benefit analysis, and decision paper to justify the need for procuring COTS, developing a new application, redesigning existing applications, or installing a system from another State agency. The study, analysis, and decision paper shall include information on the criticality/sensitivity of data, an executive

summary, and detail documentation to support the decision for a future system;

iv. Develop the requirements (development phase) for a system. This includes the definition, design, security requirements, programming, and testing stages of development. The Contractor may be required to develop a project plan with milestones, define a conceptual and physical system design and system requirements to include database design, process flows, forms, inputs, outputs, and inquiries;

v. Apply proven and new system development methodologies and tools, and defining hardware, software, and firmware requirements. The Contractor may be required to define the system environment, security vulnerability, stability, size, scale, complexity, reliability, integrity, communications, and storage requirements;

vi. Develop a test plan, writing and testing programs, and prepare a test analysis report. Testing may include functional and technical, unit, system, interface and integration testing. The Contractor shall be required to correct all discrepancies found during the testing period prior to system acceptance/accreditation or as agreed upon by the State. The Contractor may be required to develop training materials, a training plan, and conduct training on or off site;

vii. Conduct information-engineering activities, such as data analysis, logical data modeling, and physical data modeling;

viii. Develop system documentation that will capture functional, interface, integration, data, security, and internal control requirements, a data sensitivity and criticality description, system/subsystem or modules, program, database design, security and internal control specifications. The Contractor may be required to develop user, computer operations and program maintenance manuals, and plans for training, testing, quality assurance, contingency operations, backup, recovery, and restart procedures;

ix. Support COTS and State developed applications as required, such as functional and technical test and evaluation of the software including database design, network performance, etc. The Contractor may be required to develop an interface(s) with the application and install the software and any updates and upgrades;

x. Support data conversion, implementation, user and maintenance of the system. The Contractor may be required to develop and/or execute a conversion and implementation plan and strategies, develop standard operating procedures, and conduct and/or participate in post implementation reviews;

xi. Maintain the day to day system operating environment, developing disaster recovery, risk assessment and configuration management plans. This could include control of software releases, program changes, investigating program problems, reviewing and evaluating system change requests for complexity and size, preparing hour and cost estimates for change requests, and operating a help desk; and,

xii. Conduct periodic performance measurement and evaluation activities that may lead to reengineering existing applications to improve productivity, changing

functional and technical requirements, etc. The Contractor may be required to document requirements of existing systems that were not previously documented or need updating.

e) The Contractor, specifically the bidding element or component of the organization, shall ~~be assessed a Capability Maturity Model (CMM) Level 2 organization or above or have an equivalent methodology~~ **have project management and system development processes they employ as an organization. These processes should be followed by Offeror's staff and subcontractors when working on a task order project. The Offers shall provide their system development and project management processes as outlined in Section 3.1.2.3 Corporate System Methodology.**

2.4.6 Systems/Facilities Management and Maintenance.

The types of service areas included under the Systems/Facilities Management and Maintenance functional area are: (1) Data Center Technical Support/Operations; (2) Media/Learning Center Support; and, (3) Help Desk. The Contractor may provide these services externally, if the State desires.

2.4.6.1 Data Center Technical Support

a) The Contractor shall provide planning, analysis, troubleshooting, integration, acquisition, installation, operations, maintenance, training, documentation, and administration services for computer centers. The Contractor shall also maintain a centralized technical assistance service that supports problem resolution and distributes general computer center information.

b) Data center technical support functions may include, but are not limited to, the capability to:

i. Develop/provide user manuals, programmer maintenance manuals, system design documentation, etc.;
ii. Provide ongoing system and applications maintenance;
iii. Analyze and assess equipment and performance degradation, including determination of hardware, software, and/or other technical changes necessary to meet operational requirements;
iv. Perform data entry processing;
v. Perform system analysis, design, development, implementation, operation, and life cycle maintenance of imaging applications;
vi. Provide support services to maintain operational data storage and retrieval application resident on diverse computer platforms including, but not limited to, mainframes, and minicomputers;
vii. Assist in the planning and logistics of conferences (including local, remote, tele-conferences, nationwide, and/or global) and presentations;
viii. Lease, maintain, and repair primary and peripheral hardware, including, but not limited to, CPUs and tape drives;
ix. Produce and maintain backup tapes and operating system software;

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x. Develop standard operating procedures for the computer center and ensure compliance with them;
xi. Provide alternative sources of computer operations support and/or data center facilities;
xii. Process data on large-scale computer systems in the multiprocessing environment;
xiii. Provide cleaning of facility IT components;
xiv. Identify the rate of consumption for expendable supplies in enough time to replace these supplies in an orderly manner;
xv. Coordinate and track job requests to ensure that all customer requests are handled expeditiously while keeping State apprised of significant changes in workload status;
xvi. Maintain a support facility (normally consistent with State personnel working hours Monday through Friday unless otherwise specified), designed to provide assistance and help to users in all areas related to IRM/IT, including, but not limited to, personalized assistance, telephone assistance and limited training;
xvii. Establish and maintain a computer capacity management function, including collection and maintenance of statistics on storage consumption and current storage capacity;
xviii. Perform hardware/software testing, installation, and maintenance;
xix. Collect and maintain statistics on hardware and software problems, maintenance service calls, and user base;
xx. Convert data using various procedures including, but not limited to, in-house optical character recognition systems, electronically, and using vendors;
xxi. Monitor system performance and coordinate with office system vendors and users on efficient and effective use of the system;
xxii. Schedule and conduct regular user meetings;
xxiii. Maintain a training facility and provide training for all levels of users on all functions of the system;
xxiv. Develop requirements/specifications for hardware, software, and/or services;
xxv. Develop special applications as required;
xxvi. Provide assistance in formulating cost recovery and budget projections;
xxvii. Provide assistance in maintaining inventory control and location records of State-owned equipment/software and disposal of property as required;
xxviii. Perform annual inventories of computer center equipment and users;
xxix. Maintain system architecture/schematic on hardware, software, circuits, and codes for each system and user(s);
xxx. Develop and maintain a configuration management program for all supported applications;
xxxi. Develop and maintain an IT human resource management program;
xxxii. Develop and maintain a continuous improvement/quality assurance program;
xxxiii. Develop and maintain a life-cycle management program for all hardware and software applications;
xxxiv. Centrally administer software licenses, including dynamic allocation;
xxxv. Perform network-based detection of viruses and unauthorized software and facilities to counter/eliminate/control;

xxxvi. Centrally distribute electronic software (operating system, major systems, etc.);
xxxvii. Manage and administer user identifications; passwords; and security keys (public/private, unique); and
xxxviii. Administer and synchronize e-mail directories.

2.4.6.2 Media/Learning Center Support

a) The Contractor shall provide planning, analysis, troubleshooting, integration, acquisition, installation, operations, maintenance, training, documentation, and administration services for multi-media and education centers. The Contractor shall also maintain a centralized technical assistance service that supports problem resolution and distributes general multi-media and learning information.

b) Media and learning support functions include, but are not limited to, the capability to:

i. Develop/provide user manuals, programmer maintenance manuals, and system design documentation;
ii. Analyze and assess equipment and performance degradation, including determination of hardware, software, and/or other technical changes necessary to meet operational requirements, as well as supply refreshment;
iii. Assist in the planning and logistics of conferences (including local, remote, tele-conferences, nationwide, and/or global), presentations, and classes;
iv. Coordinate and track job requests to ensure that all customer requests are handled expeditiously while keeping the State apprised of significant changes in workload status;
v. Maintain a support facility (up to 24 hours-by-7 days), designed to provide assistance and help to users in all areas related to IRM/IT, including, but not limited to, personalized assistance, telephone assistance, and limited training;
vi. Prepare video tapes of presentations, meetings, and course topics;
vii. Arrange press briefings/conferences and classes;
viii. Arrange teleconferences among parties at local and remote sites;
ix. Perform hardware/software testing, installation, and maintenance;
x. Lease, maintain, and repair primary and peripheral hardware;
xi. Maintain inventory control and location records of State-owned equipment/software and dispose of property as required;
xii. Provide set-up, programming, and operating of groupware; and,
xiii. Provide professional training expertise, including instructional systems design capabilities, to improve job performance of employees utilizing the learning/media center.

2.4.6.3 Help Desk

a) The Contractor shall provide a centralized technical assistance service that supports problem resolution and distributes general information concerning IT.

b) Help Desk support functions include, but are not limited to, the capability to:

i. Evaluate hardware, firmware, peripherals, software packages, etc., for use by staff and provide recommendations for accomplishing the desired objectives;
ii. Troubleshoot problems encountered using microcomputer software;
iii. Develop/provide user manuals, programmer maintenance manuals, and system design documentation;
iv. Provide user training in a variety of areas (e.g., desktop publishing, end-user security awareness training, telecommunications, operating systems, software packages);
v. Analyze and assess equipment and performance degradation, including determination of hardware, software, and/or other technical changes necessary as well as supply refreshment to meet operational requirements;
vi. Perform data entry processing;
vii. Maintain a support facility (up to 24 hours-by-7 days), designed to provide assistance and help to users in all areas related to IRM/IT, including, but not limited to, personalized assistance, telephone assistance, and limited training;
viii. Provide support services to maintain backup capability, security, imaging/ OCR, operational data storage and retrieval application resident on diverse computer platforms such as microcomputer, standalone, and minicomputer suites;
ix. Lease, maintain, and repair primary and peripheral hardware;
x. Provide assistance in maintaining inventory control and location records of State-owned Information Technology equipment/software and disposal of property as required;
xi. Collect statistics on hardware/software/system problems, security incidents, maintenance service calls, and user base;
xii. Assist in the planning and logistics of conferences (including local, remote, tele-conferences, nationwide, and/or global) and presentations;
xiii. Analyze new applications, perform software maintenance, and make appropriate enhancements to existing systems as well as assisting customer personnel in identifying their requirements and/or problems;
xiv. Review implementation plans for applications to ensure that the system resources are available to support applications in both the long and short-term;
xv. Perform configuration management of software and hardware, including computers and network equipment across the enterprise;
xvi. Coordinate and track job requests to ensure that all customer requests are handled expeditiously while keeping the State apprised of significant changes in workload status; and,
xvii. Centralized administration of software licenses, including dynamic allocation.

2.4.7 Information System Security Support Services.

The Information System Security functional area addresses the security of information and computing resources at all organizational levels. This section describes the Information System Security functional requirements. The types of service areas included under the Information System Security functional area are: (1) hardware security support; (2) software/application security support; and, (3) disaster recovery, continuity of operations, contingency planning, and risk assessment.

2.4.7.1 Hardware Security Support.

The Contractor shall provide operational and analytical support related to security for hardware information assets. Such support includes, but is not limited to, the capability to:

a) Provide operational and analytical support of security system software (e.g., firewalls and hacker protections);

b) Provide support necessary to evaluate the integrity of operating systems and environments;

c) Ensure the operation of trusted computer system consistent with strategic plans; and,

d) Ensure that users, both internal and external, are not unreasonably impacted by the operation and administration of security system software.

2.4.7.2 Software/Application Security Support.

The Contractor shall provide security for software/applications. Such support includes, but is not limited to, the capability to:

a) Provide operational and analytical support related to security for personal computers, file servers, and LAN information assets;
b) Provide operational and analytical support related to network security;
c) Analyze and evaluate new and emerging security technologies as well as vendor security products for their applicability and feasibility of use for personal computers, LANs, telecommunications, and networks;
d) Support customer security operations, including assisting customers with developing and implementing security methodologies and safeguards to protect their personal computers, file servers, LAN, and network assets;
e) Provide technical training for all aspects of information security relative to personal computers, LANs, file servers, and networks;
f) Perform special projects and tasks to remedy existing security weakness; and,
g) Provide virus detection, elimination, and prevention support. Such support includes, but is not limited to, the capability to:

    i. Be responsible for specific activities that include incident-handling guidelines, preventive measures, software tools, etc., and may be an ongoing, multi-year effort;
    ii. Identify, isolate, neutralize, and be responsible for handling malicious programs (e.g., viruses, worms, and Trojan Horses) infecting the client organization’s systems and/or networks;
    iii. Perform research on viruses, conduct system attack studies, and develop computer security tools, which provide knowledge that the Contractor can use and information to issue before and during incidents;

iv. Maintain a clearinghouse of relevant information (i.e., description of viruses, removal/ recovery instructions, etc.) and help sites to learn about and use the computer security tools which they have developed; and,

v. Initiate proactive efforts to include developing virus detection, elimination, and prevention guidelines and identifying software tools for responding to incidents/events.

2.4.7.3 Disaster Recovery, Continuity of Operations, Contingency Planning, and Risk Assessment.

The Contractor shall provide disaster recovery, continuity of operations, contingency planning, and risk assessment support including, but not limited to, those for software applications, which are processed on various computer platforms (e.g., personal computers, mainframes, and mini-computers). Such support includes, but is not limited to, the capability to:

a) Review and/or develop disaster recovery, continuity of operations plans, contingency plans, and risk assessments;
b) Recommend ways to increase the effectiveness of the plans and the continuity of service;
c) Incorporate disaster recovery and continuity of operations plans as an attachment of the system security plan; and,
d) Perform quantitative risk analyses of large sensitive systems, generally including the risk analysis package as an attachment to the system security plan. Such support includes, but is not limited to, the capability to:

i. Identify and value computer/communications network assets;
ii. Identify potential threats to those assets and system vulnerability;
iii. Assess adequacy of existing management, operational, and technical controls in safeguarding assets against waste, loss, unauthorized access and use, and misappropriation; and,
iv. Analyze the consequences/impact of the potential threats resulting in recommendations of safeguards.

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2.4.8 Application Service Provider (ASP).

The State requires assistance in sourcing applications through an Application Service Provider(s) for a monthly flat rate charge.

a) An Application Service Provider shall have the ability to combine software, hardware and networking technologies to offer service-based applications to handle Maryland State specific requests as required.

b) An Application Service Provider must have the following minimum characteristics:

i. 24 hours-by-7 days customer support **(excludes pre-scheduled maintenance)**;
ii. The ability to maintain data integrity in instances of hardware or software failure;
iii. The ability to back-up and/or mirror application(s) and data;
iv. Security to prevent unauthorized account access;
v. Scalability of the application(s); and,
vi. 24 hours-by-7 days application availability.

c) An Application Service Provider must also have the ability to work with software integrators if necessary to customize applications for the State.

d) The Contractor shall provide an application and support of that application to replace multiple legacy systems with a single integrated system for managing operations ~~across many-to-all disciplines,~~ including, ~~but not limited to:~~ **at a minimum i, ii, and iii below. The ASP must define its base set of offerings by detailing service level and number of seats provisioned. Base sets must be identified in the technical proposal and priced in the financial proposal by completing Form E-9.1 and E-9.2 as appropriate.**

i. Finance;
ii. Human resources;
iii. E-commerce;
iv. Identify any additional support proposed for: Other systems/applications and support of those systems/applications by of Maryland State government. Such applications may include, but are not limited to: procurement, materials management, production, order management and other legacy systems; collaboration and automation tools; Web-hosting; knowledge management; back-office solutions; e-business and e-commerce applications; data warehousing; and, information services (e.g., background investigation, financial information, and legal research). **Include as an attachment to the financial proposal a schedule that details fees for these other systems/applications proposed in the technical portion**.

e) A service level agreement shall be part of each task order.

f) In the ASP financial proposals (Tables E-9.1 and E-9.2), Offerors must propose a price for single users **(100 or less)**, multiple users (~~1,000~~ **101 to 499** users) and unlimited users (~~70,000~~

WITH CORRECTIONS VIA ADDENDA #1 THROUGH #7

500 or more users). ~~Offerors will include with their financial proposal, incremental pricing between user groups. Examples would be, for each additional set of 100 users above the single user the price shall be $x, or for each additional set of 1,000 users above the multiple user, the price shall be in $x. You may provide multiples of "$x" to establish volume price breaks between user groups proposed in the Tables.~~ **This will fix the monthly ASP price per user within each user group. An example is: if the price in the multiple user group is proposed at $10.00 per user and the State has 150 users, the State will pay a monthly flat fee of $1,500 . Additional price reductions in monthly flat fees are allowed in responding to individual task orders for ASPs.**

There may be events that are beyond the control of the contractor that may cause occasional instances where the ASP is down. These service interruptions are not predictable and may occur at any time. However, contractors will be required to maintain a minimum availability of service per calendar month which excludes pre-planned maintenance time. Each task order will establish a monthly availability of service for the specific project but in no case shall the availability of service fall below 99.5% of the total hours available in a calendar month.

Availability of service is calculated on total hour per day (24) times the number of day in the calendar month (28, 29, 30, or 31). The result of this calculation is reduced by the number of hours of pre-scheduled down time and the result is the net available hours. The net available hours times the established service availability percentage results in the total hours of availability.

The difference between the total hours of availability and the actual hours of availability are lost hours. These lost hours shall be reimbursed to the State as a credit on the next available monthly bill. The lost hours rate shall be determined by calculating the current monthly ASP rate divided by the number of hours in the month.

2.5 CONTRACTOR REQUIREMENTS

2.5.1 Program Management

The Contractor shall provide the program planning, direction, coordination, and control necessary to accomplish all requirements contained in this solicitation. The Contractor is expected to establish a project organization/office to provide overall management of the Contract work. The Contractor shall manage dedicated personnel, and all subcontractors.

The roles, responsibilities, and areas of technical expertise of the Prime Contractor and all subcontractors need to be clearly defined in each task order. The Prime Contractor will be the single point contractual interface with the State.

A designated primary point of contact, the Program Manager, will be responsible for the development and negotiation of Master Task or Task Orders and overall cost, schedule, and technical performance on the Contract. This individual will be the principal point of contact and continuity will be provided throughout the duration of the Master Task or Task Order.

The Program Manager will participate in all program management review meetings and produce documentation, as defined herein, that will keep the State's Task Manager informed of the status of all tasks.

A Program Manager shall have the following project management experience/qualifications:

- Demonstrated ability and experience with managing contracts/projects of similar size and complexity;
- Demonstrated ability and experience managing large Indefinite Delivery/Indefinite Quantity Task Order contracts;
- Demonstrated ability to support breadth of technical services required under the contract;
- Ability to provide unbiased technical solutions;
- Demonstrated ability to have access to and provide corporate resources at all times;
- Demonstrated ability to maintain continuity of personnel;
- Demonstrated ability to manage subcontractors and maintain relationships with these firms; and,
- Demonstrated ability to improve efficiency (e.g., reduce costs while maintaining or improving performance levels).

In addition to a Program Manager, a Task Leader shall be named for each Master Task or Task Order by the Contractor to manage the Contractor's technical efforts. The Task Leader will be a person assigned to a Master Task or Task Order who is also performing tasks contained in the Master Task or Task Order. A Task Leader shall not be assigned to a Master Task or Task Order for the sole purpose of managing personnel.

2.5.2 Reporting and Reviews

The Contractor shall have the following responsibilities:

2.5.2.1 Progress Reporting

The Contractor shall monitor, evaluate, and report on the program and technical activities on a monthly basis. The Contractor shall develop a status report that includes the program status, significant activities, problems, and accomplishments during the reporting period. This report shall provide an overview of the status of each Master Task and/or Task Order. Submission to the Task Manager of this report will begin one month after a notice to proceed has been issued for a task.

2.5.2.2 Quarterly Coordination Reviews

The Contractor shall participate in quarterly reviews conducted by the State's Task Manager, or designee, to address current status of technical and programmatic progress and contractual obligations such as the monthly Minority Business Enterprise (MBE) activity (see Attachment D forms 5 & 6). Reviews may be required more frequently as deemed necessary by the State. The Contractor shall present a briefing on the achievements since the last review, the conduct and success of risk management activities, unresolved issues, action items, problems, Contractor working relationships, and coordinated installation and maintenance results. The Contractor shall support preparation for the meeting by:

- Identifying issues, problems, MBE activity and/or opportunities to improve services;
- Providing an overview of the status of each Master Task or Task Order;
- Reviewing and commenting on minutes; and,
- Providing a summary of total dollars invoiced to State agencies during the period and total dollars paid to Maryland certified MBEs during the period.

During these quarterly meetings the Contractor's bid/no-bid decisions will be reviewed. A Contractor who consistently fails to bid Master Tasks and Task Orders may be considered for elimination from the Contract.

2.5.3 Invoicing Requirements

The Contractor shall submit the invoices for any Master Task or Task Order to the organization identified in the Master Task or Task Order. Invoices shall be submitted on a monthly basis unless specified differently in the Master Task or Task Order. Invoices should clearly identify the retainage on each, if applicable. The Contractor shall include on the face of all invoices, the firm's Federal Tax Identification Number. The State and its agencies are generally exempt from Federal excise taxes, Maryland sales and use taxes, District of Columbia sales taxes and transportation taxes. The Contractor(s), however, is not exempt from such sales and use taxes and may be liable for the same. Exemption certificates shall be completed upon request.

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WITH CORRECTIONS VIA ADDENDA #1 THROUGH #7

2.6 PERSONNEL QUALIFICATIONS

The Contractor shall provide personnel to satisfy the labor qualifications specified. The Contractor shall only bid staff available at the time of the Task Order submission. In response to each Master Task or Task Order, the Contractor shall provide personnel that satisfy the personnel qualifications specified within this section for each of the labor categories required under the specific Master Task or Task Order. In the event that labor categories are not identified in the Master Task or Task Order, the Contractor shall select the appropriate labor categories for the task from those specified in this section and identify personnel that satisfy the requirements of these labor categories.

In addition to the total and specialized experience defined in the skill categories, specific areas of required expertise may be further defined in a Master Task or Task Order. The Offeror(s) shall certify that the candidate meets the Contract qualifications. At the option of the Task Manager, Contractor personnel may be approved for performance in multiple skill categories for which they are qualified.

Substitution of Education for Experience. A Bachelor's Degree or higher may be substituted for the general and specialized experience for those labor categories requiring a High School Diploma. Substitution shall be approved by the State's Project Manager for the task.

Substitution of Experience for Education. Substitution of experience for education may be permitted at the discretion of the State's Project Manager for the task.

Key Personnel. Certain senior and managerial personnel are essential for successful Contractor performance. The Offeror shall provide resumes for key personnel, identifying the labor category or categories for which they are proposing that individual. Key personnel **submitted with the proposal, are for evaluation purposes. Offeror's must insure the identified key personnel or personnel with similar qualification will be available to perform any task orders awarded.** ~~will not be reassigned to another task without the written concurrence of the responsible State's Project Manager for the task.~~ Attachment I provides the list of key personnel by labor category and functional areas for which resumes must be provided. ~~If any key personnel leave the employment of the Contractor, or are approved for reassignment by the State's contract officer, the replacement must have similar qualifications and be approved by the State's contract officer~~. **Assigned key personnel will be subject to the following:**

Substitution Of Key Personnel.

(a) During the first 210 calendar days of the contract performance period for a task, no substitutions of key personnel will be permitted unless such substitutions are necessitated by an individual's sudden illness, death, or as otherwise approved by the Project Manager's Agency Technical Representative. In any of these events, the contractor shall promptly notify the Project Manager's Agency Technical Representative for the task and provide the information required by paragraph (c). After the initial 210 calendar day period, all proposed substitutions of key personnel must be submitted in writing, at least 15 business days in advance of the proposed substitution, to the Project Manager's Agency Technical

Representative, with the information required in paragraph (c). The Government must agree to the substitution in writing before such substitution shall become effective.

(b) Individuals proposed and accepted as key personnel for this contract are expected to remain dedicated to the contract. Substitutions will be allowed only when the Government specifically agrees to the substitution in writing. All proposed substitutes of key personnel must have qualifications at least equal to that of the person initially proposed by the offeror and evaluated and accepted by the Government. The burden of illustrating this comparison shall be the contractor's. The resumes of the initially proposed key personnel shall become the minimum requirement for qualifications for the duration of the total contract term. If one or more of the key personnel are unavailable for work under this contract for a continuous period exceeding 15 calendar days, the contractor shall immediately notify the Project Manager's Agency Technical Representative and propose to replace personnel with personnel of equal or better qualifications within 15 calendar days of notification. All substitutions shall be made in accordance with this provision.

(c) All requests for substitutions must provide a detailed explanation of the circumstances necessitating the proposed substitutions, a resume of the proposed substitute (see paragraph (d)), and any other information requested by the Project Manager's Agency Technical Representative to make a determination as to the appropriateness of the proposed substitution. All proposed substitutes must have educational qualifications and work experience equal to or better than the resume initially proposed for key personnel; the burden of illustrating this comparison shall be the contractor's.

(d) Resumes shall be signed by all substituting individuals and their formal supervisor, and the official resume of the previous employee shall be provided for comparison purposes.

2.6.1 Labor Categories And Qualifications

The following section describes the labor categories to be provided under the RFP. Offers must propose only those labor categories identified specifically for each functional area in Attachment I.

Program Manager

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master’s Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have twelve (12) years of Automated Data Processing (ADP) experience, including at least eight (8) years of ADP management experience. The Program Manager shall have no less than two (2) full years of employment with the Offeror.

Specialized Experience: At least eight (8) years of direct supervision of ADP software development, integration, and maintenance projects. Must be capable of leading projects that

involve the successful management of teams composed of data processing and other information management professionals who have been involved in analysis, design, integration, testing, documenting, converting, extending and implementing automated information. Must have proven skills that are specified in the delivery order to be managed.

Duties: Serve as the single point of contact for the Contractor with the State regarding this Contract vehicle. Performs day-to-day management of overall Contract support operations, possibly involving multiple projects and groups of personnel at multiple locations. Organizes, directs, and coordinates the planning and production of all Contract support activities, including subcontractors. Develops work breakdown structures and prepares charts, tables, graphs, major milestone calendars and diagrams to assist in analyzing problems and making recommendations. Demonstrates writing and oral communications skills. Establishes and alters (as necessary) corporate management structure to direct effective Contract support activities. Must be capable of negotiating and making binding decisions for the Contractor(s). Demonstrates corporate commitment. Able to bring the full capabilities and assets of the company to bear.

Task Leader: Indicates this category may serve as a Task Leader on one or more Task Orders. Management experience is required. Task Leaders must have supervisory or project leader experience. This experience is not in addition to the experience requirements for the skill category. Project leader experience is experience that demonstrates an individual's ability to accomplish projects/tasks through others.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Project Manager

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master’s Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have ten (10) years of ADP experience, including at least five (5) years of ADP software management experience.

Specialized Experience: At least five (5) years of direct supervision of ADP software development, integration maintenance projects experience.

Duties: Performs day-to-day management of assigned delivery orders projects that involve teams of data processing and other information systems/management professionals who have previously been involved in analyzing, designing, integrating, testing, documenting, converting, extending, and implementing automated information systems. Demonstrates proven skills in those technical areas addressed by the delivery order to be managed. Organizes, directs, and coordinates the planning and production of all activities associated with assigned delivery order projects. Prepares and presents program level management products such as, work breakdown structures, charts, tables, graphs, major milestone calendars and diagrams to assist in analyzing problems and making recommendations. Demonstrates writing and oral communications skills.

Task Leader: Indicates this category may serve as a Task Leader on one or more Task Orders. Management experience is required. Task Leaders must have supervisory or project leader experience. This experience is not in addition to the experience requirements for the skill category. Project leader experience is experience that demonstrates an individual's ability to accomplish projects/tasks through others.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Subject Matter Expert

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have twelve (12) years of experience in the ADP field.

Specialized Experience: At least eight (8) years of combined new and related older technical experience in the ADP field directly related to the required area of expertise.

Duties: Defines the problems and analyzes and develops plans and requirements in the subject matter area for moderately complex to complex systems. Coordinates and manages the preparation of analysis, evaluations, and recommendations for proper implementation of programs and systems specifications in the following specialties:

a) Information Systems Architecture
    i. Information Systems
    ii. Strategic Information Systems
b) Automation
    i. Hardware (micro through mainframe)
    ii. Computer languages (particularly Visual Basic, Java, etc.)
    iii. Operating systems (particularly MS DOS, Windows, Novell, UNIX, POSIX, VM, DOS-VSE, and MVS)
    iv. Database management systems
    v. Automation security systems
    vi. Decision support systems
c) Risk Management/Electronic Analysis
d) Software (consisting of all commercially available software used under this Contract for PCs, minis, and mainframes)
e) Life-Cycle Management
f) Software Development Methodologies
    i. Waterfall/Grand Design
    ii. Incremental
    iii. Evolutionary
g) Modeling and Simulation
h) Graphics Processing

i) Data Warehousing

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Senior Computer Software/Integration Analyst

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have eight (8) years of progressive working experience as a computer specialist or a computer systems analyst.

Specialized Experience: At least five (5) years of experience as a Computer Systems Analysts.

Duties: Must be knowledgeable in implementing computer systems in a phased approach of requirements analysis and conceptual design, site survey, system design review, critical design review, installation, integration, and testing. Must be knowledgeable in performing requirements analysis for a wide range of users in areas of office automation, and finance and accounting. Must be able to present system designs for user approval at formal reviews. Must be capable of performing configuration management, software integration, interpreting software test results, and recommending solutions for unsatisfactory test results. Must be knowledgeable in life-cycle support, including maintenance, administration, and management. Must be able to provide solutions to identified software problem reports.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Senior Computer Specialist

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have 8 years of computer experience in at least two of the following disciplines: system analysis, system programming, application programming, equipment analysis.

Specialized Experience: At least 5 years of experience either as a computer hardware or systems software specialist or as a systems analyst with duties relating to the evaluation of third and fourth generation of current state-of-the-art computer hardware and software and its ability to support specific requirements for hardware and software evaluation, system management, or large-scale system development and maintenance.

Duties: Must be able to determine costs for converting computer systems from one language or machine to another by using compilers, simulators, emulators, and/or language translators and to recommend better utilization of operating systems capabilities for improving system efficiency. Develops, manages, maintains, and evaluates current state-of-the-art computer hardware, software, and software development tools; evaluates their ability to support specific requirements and interface with other equipment and systems; determines potential and actual bottlenecks and proposes recommendations for their elimination; and makes recommendations for system improvements that will result in optimal hardware and software use.

~~**Key Personnel:** Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.~~

Computer Specialist

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have five (5) years of computer experience in at least two (2) of the following disciplines: systems analysis, systems programming, application programming, or equipment analysis.

Specialized Experience: At least three (3) years of experience as either a computer hardware and/or systems software specialist, or as a systems analyst with duties relating to the evaluation of third- and fourth-generation or state-of-the-art computer hardware and software and its ability to support specific requirements for systems management or large-scale system development and maintenance.

Duties: Must be able to determine costs for converting computer systems from one language or machine to another by utilizing compilers, simulators, emulators, and/or language translators and recommend better utilization of operating systems capabilities to improve system efficiency. Must be able to develop, manage, maintain, and evaluate state-of-the-art computer hardware, software, and software development tools; evaluate their ability to support specific requirements and interface with other equipment and systems; determine potential and actual bottlenecks; propose recommendations for their elimination; and make recommendations for systems improvements that will result in optimal hardware and software usage.

Financial Analyst

Education: A Bachelor's Degree from an accredited college or university with a major in Finance, Business, or other related technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have five (5) years of financial management experience.

Specialized Experience: At least three (3) years of experience in financial management with demonstrated ability in analyzing, designing, and developing automated applications for unique business practices in a fee-for-service environment.

Duties: Must be able to clearly define government financial business practices and Electronic Commerce/Electronic Data Interchange (EC/EDI) opportunities, and incorporate the defined processes into an automated solution that includes relational databases and distributed systems for integration into the government financial business system. Identifies potential problems and solutions through analysis identifying recommended solutions. Must be able to work with functional specialists, automation specialists, Contractors, vendors, and customers to effectively automate the customer's requirements into an automated application. Acts as a focal point to coordinate all disciplines in the recommended solution. Must be able to communicate with both ADP and financial oriented individuals to document the flow, recommend opportunities, impact recommendations, and serve as the liaison among the financial specialist and automation specialist that do not have both disciplines. Must be able to apply state-of-the-art applications that will effectively automate financial applications in the most effective manner while adhering to the established Accounting Principals and Practices.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Senior Computer Systems Analyst

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have eight (8) years of computer experience working independently or under general direction on complex application problems involving all phases of systems analysis.

Specialized Experience: At least five (5) years of experience in analysis and design of business applications for complex large-scale or mid-tier computer systems, or LAN-based systems, to include experience in Database Management Systems (DBMS), and use of programming languages. Knowledge of current storage and retrieval methods and demonstrated ability to formulate specifications for computer programmers to use in coding, testing, and debugging of computer programs.

Duties: Provides technical and administrative direction for personnel performing software development tasks, including the review of work products for correctness, adherence to the design concept and to user standards and for progress in accordance with schedules. Must be able to coordinate with the Program Manager to ensure problem solution and user satisfaction. Makes recommendations, if needed, for approval of major systems installations. Prepares

milestone status reports and deliveries/presentations on the system concept to colleagues, subordinates, and end user representatives. Provides daily supervision and direction to support staff.

Task Leader: Indicates this category may serve as a Task Leader on one or more Task Orders. Management experience is required. Task Leaders must have supervisory or project leader experience. This experience is not in addition to the experience requirements for the skill category. Project leader experience is experience that demonstrates an individual's ability to accomplish projects/tasks through others.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Junior Computer Systems Analyst

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have three (3) years of computer experience in assignments of a technical nature working under close supervision and direction.

Specialized Experience: At least one (1) year of experience in analyzing and programming applications on large-scale or mid-tier computers (or LAN-based) with a minimum of one (1) year of design and programming of moderately complex ADP systems.

Duties: Develops requirements for information systems from a project's inception to conclusion. Develops required specifications for simple to moderately complex systems. Assists senior computer systems analyst in preparing input and test data for the proposed system.

Telecommunications Systems Analyst

Education: A Bachelor's Degree from an accredited college or university with a major in Telecommunications, Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have five (5) years of experience in engineering, systems analysis, design and programming.
Specialized Experience: At least two (2) years of experience in functional and data requirement analysis, systems analysis and design, programming, program design of billing, trouble ticket management, service order entry, and/or configuration management systems supporting operations of large telecommunications support organizations.

Duties: Must be capable of planning, analysis, design, development, and maintenance of operations support systems used by telecommunications organizations. Must be capable of performing business systems planning, information planning, and analysis in support of telecommunications support functions, including billing, trouble ticket management, service order entry, and/or configuration management. Performs process and data modeling in support of the planning and analysis efforts using both manual and automated tools. Provides technical guidance in software engineering techniques and automated support tools.

Applications Programmer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have five (5) years of computer experience in information systems design.

Specialized Experience: At least three (3) years of experience as an application programmer on large-scale DBMS, knowledge of computer equipment, and ability to develop complex software to satisfy design objectives.

Duties: Analyzes functional business applications and design specifications for functional areas such as finance, accounting, personnel, manpower, logistics, and Contracts. Develops block diagrams and logic flowcharts. Translates detailed design into computer software. Tests, debugs, and refines the computer software to produce the required product. Prepares required documentation, including both program-level and user-level documentation. Enhances software to reduce operating time or improve efficiency. Provides technical direction to programmers as required to ensure program deadlines are met.

Computer Systems Programmer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have five (5) years of computer experience in information systems design.

Specialized Experience: At least three (3) years of experience in ADP systems analysis and programming.

Duties: Create and/or maintain operating systems, communications software, database packages, compilers, repositories, and utility and assembler programs. Modify existing software

and develop special-purpose software to ensure efficiency and integrity between systems and applications.

Senior Computer Programmer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have eight (8) years of programming experience in software development or maintenance.

Specialized Experience: At least five (5) years of experience in ADP systems analysis and programming.

Duties: Must be capable of utilizing third- and fourth-generation or current state-of-the-art ADP equipment and languages to develop and prepare diagrammatic plans for solution of business, management, communications, and strategic problems. Must be able to design detailed programs, flowcharts, and diagrams showing mathematical computations and sequence of machine operations necessary to copy and process data and print results. Must be able to verify the accuracy and completeness of programs and systems by preparing sample representative data and perform testing by means of cycle and system processing.

~~**Key Personnel:** Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.~~

Junior Computer Programmer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have three (3) years of computer programming experience.

Specialized Experience: None.

Duties: Must be capable of translating detail program flowcharts into program-coded instructions used by third- and fourth-generation, or current state-of-the-art computers.

Senior Information Engineer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have eight (8) years of experience in managing the implementation of information engineering projects and experience in systems analysis, design and programming using CASE and IE tools and methods.

Specialized Experience: At least five (5) years of experience in information systems development, functional and data requirement analysis, systems analysis and design, programming, program design, and documentation preparation.

Duties: Develops analytical and computational techniques and methodology for problem solutions. Performs process and data modeling in support of the planning and analysis efforts using manual and automated tools; such as Integrated Computer-Aided Software Engineering (I-CASE) tools. Must be able to apply reverse engineering and reengineering disciplines to develop migration strategic and planning documents. Provides technical guidance in software engineering techniques and automated support tools. Must be capable of applying business process improvement practices to modernization projects. Applies, as appropriate, activity and data modeling transaction flow analysis; internal control and risk analysis; modern business methods; and performance measurement techniques. Assists in establishing standards for information systems procedures. Develops and applies organization wide information models for use in designing and building integrated, shared software and DBMS.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Information Engineer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have five (5) years of experience in engineering, systems analysis, design, and programming.

Specialized Experience: At least two (2) years of experience in information systems development, functional and data requirement analysis, systems analysis and design, programming, program design, and documentation preparation.

Duties: Must be capable of applying a business wide set of disciplines for planning, analysis, design, construction, and maintenance of information systems on a business-wide basis or across a major sector of the business. Must be capable of performing business strategic systems planning, information planning, and analysis. Performs process and data modeling in support of

the planning and analysis efforts using both manual and automated tools, such as I-CASE tools. Must be able to apply reverse engineering and reengineering disciplines to develop migration strategic and planning documents. Provides technical guidance in software engineering techniques and automated support tools.

Database Manager

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have seven (7) years of experience in the development and maintenance of database systems.

Specialized Experience: At least five (5) years of experience with database management systems, system design and analysis, operating systems software, and internal and data manipulation languages.

Duties: Must be capable of managing the development of database projects. Must be able to plan and budget staff and data resources. Supports application developers in planning preparation, load analysis, and backup and recovery of data. When necessary, reallocates resources to maximize benefits. Must be able to prepare and deliver presentations on DBMS concepts. Provides daily supervision and direction to support staff. Monitors performance and evaluates areas to improve efficiency.

Task Leader: Indicates this category may serve as a Task Leader on one or more Task Orders. Management experience is required. Task Leaders must have supervisory or project leader experience. This experience is not in addition to the experience requirements for the skill category. Project leader experience is experience that demonstrates an individual's ability to accomplish projects/tasks through others.

Database Management Specialist

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have six (6) years experience in DBMS systems analysis and programming.

Specialized Experience: At least three (3) years of experience in using current DBMS technologies, application design utilizing various database management systems and experience with DBMS internals.

Duties: Must be capable of providing highly technical expertise and support in the use of DBMS. Must be able to evaluate and recommend available DBMS products to support validated user requirements. Defines file organization, indexing methods, and security procedures for specific user applications. Develops, implements, and maintains database back-up and recovery procedures for the processing environments, and ensures that data integrity, security, and recoverability are built into the DBMS applications.

Quality Assurance Manager

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have six (6) years of experience in quality assurance and quality control.

Specialized Experience: At least three (3) years of experience in verification and validation, software testing and integration, software metrics, and their application to software quality assessment.

Duties: Must be capable of maintaining and establishing a process for evaluating software and associated documentation. Must be able to determine the resources required for quality control. Must be able to maintain the level of quality throughout the software life cycle. Develops software quality assurance plans. Conducts formal and informal reviews at predetermined points throughout the development life cycle.

Quality Assurance Specialist

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have five (5) years of experience working with quality control methods and tools.

Specialized Experience: At least three (3) years of experience in verification and validation, software testing and integration, software metrics, and their application to software quality assessment, and a demonstrated knowledge of system and project life cycles.

Duties: Must be able to determine the resources required for quality control. Must be able to maintain the level of quality throughout the software life cycle. Develops software quality

assurance plans. Must be capable of maintaining and establishing a process for evaluating software and associated documentation. Participates in formal and informal reviews at predetermined points throughout the development life cycle to determine quality. Examines and evaluates the SQA process and recommends enhancements and modifications. Develops quality standards.

Senior Systems Engineer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have six (6) years of experience in systems engineering.

Specialized Experience: At least three (3) years of experience in the supervision of system engineers, and demonstrated use of interactive, interpretative systems with on-line, real-time acquisition capabilities.

Duties: Must be able to analyze information requirements. Must be able to evaluate problems in workflow, organization, and planning. Develops appropriate corrective action. Provides daily supervision and direction to staff.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Systems Engineer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have three (3) years of experience in systems engineering.

Specialized Experience: At least one (1) year of experience in analytical problem solving of workflow, organization and planning.

Duties: Must be capable of analyzing information requirements. Evaluates system problems of workflow, organization, and planning. Develops appropriate corrective action.

Software Engineer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have three (3) years of experience as a software engineer.

Specialized Experience: At least two (2) years of experience working with Ada, SQL, or third/fourth generation languages in the design and implementation of systems and one (1) year working with DBMS.

Duties: Reviews and analyzes system specifications. Prepares programming specifications. Analyzes existing systems/subsystems for reusability benefits and needed changes. Prepares design plans and written analyses. Prepares unit and test scripts. Prepares documentation.

Senior Interdisciplinary Engineer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have eight (8) years of experience in technical work in the major areas of system management and system integration.

Specialized Experience: At least five (5) years of experience in specialized ADP and telecommunications disciplines involving system interfaces, system integration and network development, and/or integration involving a wide range of network, hardware, and software solutions. At least 3 years in operating systems software, electronic communications analysis and design, networking, mechanical engineering or civil engineering.

Duties: Must have demonstrated ability to perform senior level engineering and/or ADP tasks in the disparate areas of software, electronics telecommunications, networking, mechanical or civil engineering. Must be capable of translating mission requirements and information problems into solutions employing current state-of-the-art information system equipment and software. Must be able to define interaction with and/or interface between these different categories of requirements and to develop the appropriate design to support these requirements while employing methodologies from any of the above disciplines as required. Must be able to serve as a liaison to interpret and translate among the various disciplines represented on the task team, and serve as a point of contact for evaluation of problems arising from the interdisciplinary nature of the task.

Interdisciplinary Engineer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or

technical discipline. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have five (5) years of experience in technical work in the areas of system management and system integration.

Specialized Experience: At least three (3) years experience in ADP disciplines involving operating systems software, electronics communications analysis and design, system interface, systems integration, and mechanical or civil engineering.

Duties: Must be capable of translating mission requirements and information problems into solutions employing current state-of-the-art information system equipment and software. Must be able to define interaction and interface among different categories of requirements, and develop appropriate design to support the requirements while employing ADP methodologies. Must be able to serve as a liaison to interpret and translate various disciplines represented on the task team, and serve as a point of contact for evaluation of problems arising from the interdisciplinary nature of the task.

Computer Operations Center Specialist

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: This position requires a minimum of five (5) years of experience.

Specialized Experience: At least three (3) years of specialized experience working in a computer operations center. Ability to function in a multi-system and/or multi-application environment. Ability to operate and monitor multiple terminals. Knowledge of data processing operations, equipment, procedures, and workflow. Knowledge of environmental requirements of mainframes, servers and other hardware. Knowledge of emergency security procedures for a computer operations center.

Duties: Establishes detailed schedules for utilization of all equipment in the computer operations center to obtain maximum usage. Consults with personnel in other data processing sections to coordinate activities, and prepare activity and progress reports regarding the computer operations center. Evaluates production, equipment and personnel costs. Analyzes and interprets technical data processing data. Communicates technical data processing information effectively both orally and in writing. Applies applicable rules, regulations, policies and procedures of the computer operations center.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Computer Operations Research Analyst

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field.

General Experience: A minimum of one (1) year of work experience in a business environment.

Specialized Experience: At least one (1) year of demonstrated experience working in a computer operations center. Ability to function in a multi-system and/or multi-application environment. Ability to follow complex oral and written instruction. Ability to operate and monitor multiple terminals.

Duties:. Performs technical work in the operation of electronic computers and auxiliary peripheral equipment. Collates information into meaningful reports and presentation material. Maintains any technical information in a systems library. Applies principles and methods to obtain maximum utilization of computer equipment. Operate and care for electronic computer and peripheral equipment.

Office Automation Specialist

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: This position requires a minimum of five (5) years of experience.

Specialized Experience: At least three (3) years of specialized experience in the operation of specialized data entry equipment.

Duties: Specialized data entry work, operating specialized data entry equipment in a high production and closely monitored work environment. Responsible for key entering data from a variety of source documents with specific standards maintained for speed and accuracy.

Help Desk Manager

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: This position requires a minimum of seven (7) years of experience.

Specialized Experience: At least five (5) years of specialized experience includes management of help desks in a multiserver environment, comprehensive knowledge of PC operating systems (e.g., DOS, Windows), networking and mail standards, and supervision of help desk employees. General experience includes information systems development, network and other work in the client/server field, or related fields. Demonstrated ability to communicate orally and in writing and to have a positive customer service attitude.

Duties: Provides daily supervision and direction to staff who are responsible for phone and in-person support to users in the areas of e-mail, directories, standard Windows desktop applications, and other network services. Manages personnel who serve as the first point of contact for troubleshooting hardware and software PC and printer problems.

Task Leader: Indicates this category may serve as a Task Leader on one or more Task Orders. Management experience is required. Task Leaders must have supervisory or project leader experience. This experience is not in addition to the experience requirements for the skill category. Project leader experience is experience that demonstrates an individual's ability to accomplish projects/tasks through others.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Help Desk Specialist

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field.

General Experience: This position requires a minimum of four (4) years of experience.

Specialized Experience: At least five (5) years comprehensive knowledge of PC operating systems, e.g., DOS, Windows, as well as work on a help desk. General experience includes information systems development, work in the client/server field, or related fields. Demonstrated ability to communicate orally and in writing and to have a positive customer service attitude.

Duties: Provides telephone and in-person support to users in the areas of directories, standard Windows desktop applications, and applications developed under this Contract or predecessors. Serves as the initial point of contact for troubleshooting hardware/software PC and printer problems.

Senior Computer Security Systems Specialist

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or

technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: This position requires a minimum of eight (8) years of experience.

Specialized Experience: At least five (5) years of specialized experience in defining computer security requirements for high-level applications, evaluation of approved security product capabilities, and developing solutions to Multilevel Security (MLS) problems.

Duties: Analyzes and defines security requirements for MLS issues. Designs, develops, engineers, and implements solutions to MLS requirements. Responsible for the implementation and development of the MLS. Gathers and organizes technical information about an organization's mission goals and needs, existing security products, and ongoing programs in the MLS arena. Performs risk analyses, which also include risk assessment. Provides daily supervision and direction to staff.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Computer Security Systems Specialist

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or four (4) years of equivalent experience in a related field. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: This position requires a minimum of six (6) years of experience.

Specialized Experience: At least four (4) years of specialized experience in defining computer security requirements for high-level applications, evaluation of approved security product capabilities, and developing solutions to Multilevel Security (MLS) problems.

Duties: Analyzes and defines security requirements for MLS issues. Designs, develops, engineers, and implements solutions to MLS requirements. Gathers and organizes technical information about an agency's mission goals and needs, existing security products, and ongoing programs in the MLS arena. Performs risk analyses, which also include risk assessment. Provides daily direction to staff.

Testing Specialist

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have 4 years of experience in computer software development.

Specialized Experience: At least 2 years of software testing experience (integration and acceptance).

Duties: Must be capable of designing and executing IT software tests and evaluating results to ensure compliance with applicable regulations. Must be able to prepare test scripts and all required test documentation. Must be able to design and prepare all needed test data. Analyzes internal security within systems. Reviews test results and evaluates for conformance to design.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Training Specialist/Instructor

Education: A Bachelor's Degree from an accredited college or university with a major in Education/Training in the areas of Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have 4 years of experience in information systems development, training, or related fields.

Specialized Experience: At least 2 years of experience in developing and providing IT and end user training on computer hardware and application software.

Duties: Conducts the research necessary to develop and revise training courses and prepares appropriate training catalogs. Prepares all instructor materials (course outline, background material, and training aids). Prepares all student materials (course manuals, workbooks, handouts, completion certificates, and course critique forms). Trains personnel by conducting formal classroom courses, workshops, and seminars.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Documentation Specialist

Education: Associate's Degree in related field. A Bachelor's degree is preferred.

General Experience: Must have four (4) years of experience in technical writing and documentation experience pertaining to all aspects of ADP.

Specialized Experience: A minimum of two (2) years of experience in preparing technical documentation, which is to include researching for applicable standards.

Duties: Gathers, analyzes, and composes technical information. Conducts research and ensures the use of proper technical terminology. Translates technical information into clear, readable documents to be used by technical and non-technical personnel. For applications built to run in a Windows environment, uses the standard help compiler to prepare all on-line documentation.

Research Analyst

Education: High School Diploma or Associate's Degree in Business, or related field. A Bachelor's degree is preferred.

General Experience: A minimum of one (1) year of work experience in a business environment.

Specialized Experience: At least one (1) year of demonstrated experience word processing, using electronic spreadsheets and other administrative software products. General knowledge of governmental documents and procedures.

Duties: Analyzes existing and potential product and service information, prospective customers and markets. Collates information into meaningful reports and presentation material. Maintains any technical information in a systems library.

Technical Writer/Editor

Education: Associate's Degree in related field. A Bachelor's degree is preferred.

General Experience: A minimum of five (5) years of experience in this area.

Specialized Experience: At least two (2) years of experience in editing documents, including technical documents.

Duties: Assists in collecting and organizing information for preparation of user manuals, training materials, installation guides, proposals, and reports. Edits functional descriptions, system specifications, user manuals, special reports, or any other customer deliverables and documents. Assists in performing financial and administrative functions. Must demonstrate the ability to work independently or under only general direction.

Project Control Specialist

Education: High School Diploma or equivalent. A Bachelor's degree is preferred.

General Experience: Must have three (3) years of experience working with monitoring systems. Familiar with manpower and resource planning, preparing financial reports and presentations, and cost reporting under government Contract guidelines.

Specialized Experience: Preparation and analysis of financial statements, development of project schedules, using cost-accounting and labor-reporting systems, working knowledge of

Contract and subcontract management. Proficient in the use of spreadsheets and project management tools.

Duties: Monitors financial and/or administrative aspects of assigned Contracts and deliverables. Tracks and validates all client financial information, establishes and maintains master Contract files, prepares and monitors status of all deliverables, tracks the value of Contracts, and reports payment of government fees. Updates task reports with funding information and prepares revenue projections for all active Contract Master Task or Task Orders. Uses automated systems to track deliverables, financial transactions, and management information.

Program Administration Specialist

Education: High school diploma or equivalent. A Bachelor's degree is preferred.

General Experience: Must have three (3) years of experience working with project management tools and reporting systems. Familiar with government Contracts, work breakdown structures, management/business plans, and program reporting.

Specialized Experience: At least two (2) years of direct program experience in Contract administration and preparing management reports. Has worked in support of a Program Manager on a government Contract.

Duties: Assists in the preparation of management plans and various customer reports. Coordinates schedules to facilitate the completion of task order and change proposals, Contract deliverables, task order reviews, briefings and presentations, and IPR preparation. Performs analysis, development, and review of program administrative operating plans and procedures.

Advanced Technology Senior Application Developer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or five (5) years of equivalent experience in a related field. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have three (3) years of computer experience in at least two of the following disciplines: system analysis, system programming, application programming, and equipment analysis.

Specialized Experience: At least one (1) year of experience developing applications using advanced technologies, including Internet protocols or web-based technology. Technologies include HTML, CGI applications, PERL or Javascript, and Java.

Duties: Must be able to translate applications requirements into web-based solutions using available technology. Must be able to apply new and emerging technologies to the software development process.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Advanced Technology Application Developer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have two (2) years of computer experience in at least two of the following disciplines: systems analysis, systems programming, application programming, and equipment analysis.

Specialized Experience: At least one (1) year of experience developing applications using advanced technologies, such as Internet protocols or web-based technology. Technologies include HTML, CGI applications, PERL or Javascript, and Java.

Duties: Must be able to translate applications requirements into web-based solutions using available technology. Must be able to apply new and emerging technologies to the software development process.

~~**Key Personnel:** Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.~~

Internet/Intranet Site Developer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have one (1) year of computer experience using Internet/intranet products, including Webserver and related products selection and administration.

Specialized Experience: At least one (1) year of experience building and installing web sites, including product selection, configuration, installation, maintenance, and site policy development. Experience developing web pages using HTML and associated scripting and graphics integration.

Duties: Must be able to translate applications requirements into the design of complex web sites, including integrating web pages and applications to serve either as stand alone sites or as the front end to web-based applications. Must be able to apply new and emerging technologies to the site development process.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Internet/Intranet HTML Developer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline or three (3) years of equivalent experience in a related field. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have one (1) year of computer experience in at least two of the following disciplines: HTML, Javascript, GIF or JPG imaging, computer graphics, web page development.

Specialized Experience: At least one (1) year of experience developing web pages using HTML and associated scripting and graphics integration.

Duties: Must be able to translate applications requirements into web pages to serve either as stand-alone site elements or as the front end to web-based applications. Must be able to apply new and emerging technologies to the page development process.

Systems Design Architect

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have six (6) years of experience planning, designing, building, and implementing mid-range IT systems.

Specialized Experience: At least four (4) years of experience developing application, development, network, and technical architectures for mid-range client/server and mainframe applications. Demonstrated ability to develop and execute architecture strategies and to perform feasibility studies and integration analyses. Experience supervising and providing guidance in implementing various mid-range architectures and supporting implementation of large-scale applications.

Duties: Must be able to lead team in developing application, development, network, and technical architectures for mid-range client/server and mainframe applications. Responsible for gathering and defining the architecture requirements and for ensuring that the architectures are compatible and in compliance with the appropriate IT organization and project standards.

Systems Design Engineer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: Must have six (6) years of experience planning, designing, building, and implementing IT systems. Familiar with Capability Maturity Model compliant structured methodology.

Specialized Experience: At least four (4) years of experience analyzing user requirements and translating them into system designs using various design tools and techniques. Demonstrated ability to develop and execute system designs, ensure implementation of repeatable processes, and ensure compliance with CMM methodology.

Duties: Must be able to perform design of information systems, including the design of the application architecture, database, and interfaces. Responsible for gathering and analyzing user requirements and translating them into system designs.

System Security Expert

Education: A Master's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: This position requires a minimum of twelve (12) years of experience.

Specialized Experience: At least seven (7) years of highly specialized experience in one or more information, computer, or network security disciplines. These disciplines could include penetration testing, intrusion detection and audit analysis, public key infrastructure, cryptography, strong authentication, risk analysis, and multilevel security.

Duties: Possesses requisite knowledge and expertise so recognized in the professional community that the Government is able to qualify the individual as an expert in a specified field. Provides expert-level advice, analysis, and functional expertise to tasks. Demonstrates exceptional oral and written communication skills. Reviews requirements and task documentation for accuracy and applicability.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

Computer System Security Specialist

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or

technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: This position requires a minimum of eight (8) years of experience.

Specialized Experience: At least five (5) years of experience in defining computer security requirements for systems or high-level applications, evaluating approved security product capabilities, and developing proper computer system security solutions.

Duties: Analyzes and defines security requirements for computer systems, which may include mainframes, workstations, and personal computers. Designs, develops, engineers, and implements solutions that meet security requirements. Responsible for integration and implementation of the computer system security solution. Gathers and organizes technical information about an organization's mission goals and needs, existing security products, and ongoing programs in computer security. Performs risk analyses of computer systems and applications during all phases of the system development life cycle.

Key Personnel: Indicates this category may serve as Key Personnel for functional areas as identified in Attachment I.

INFOSEC Engineer

Education: A Bachelor's Degree from an accredited college or university with a major in Computer Science, Information Systems, Engineering, Business, or other related scientific or technical discipline. A Master's Degree is preferred. A Master's Degree in one of the above disciplines equals one year specialized and two years general experience.

General Experience: This position requires a minimum of eight (8) years of experience.

Specialized Experience: At least five (5) years of experience in defining security programs or processes for the protection of sensitive or classified information.

Duties: Analyzes and defines security requirements for information protection. Defines and develops security policies. Analyzes the sensitivity of information, performs vulnerability and risk assessments on the basis of defined sensitivity and information flow.

System Security Research Analyst

Education: A Bachelor's degree from an accredited college or university in a related field or high school diploma with additional experience. A Bachelor's degree is preferred.

General Experience: This position requires no experience if a B.A. or B.S. Degree has been obtained. If only a high school diploma has been obtained, a minimum of two (2) years of experience is required.

WITH CORRECTIONS VIA ADDENDA #1 THROUGH #7

Specialized Experience: If a B.A. or B.S. Degree has been obtained, a minimum of one (1) year of experience is required in researching information using technical documentation, library resources, and the Internet. Familiarity with Office 95 or Office 97 applications.

Duties: Gathers, analyzes, and composes technical information. Conducts research in one or more security disciplines and ensures the use of proper technical terminology. Translates technical information into clear, readable documents to be used by technical and nontechnical personnel.

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